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SCHOOL AND SOCIETY

EDITED BY J. McKEEN CATTELL

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Volume IX SATURDAY, JANUARY 18, 1919 Number 212

THE PUBLIC EDUCATION OF YOUTH; THE PLACE OF CREATIVE WORK AND OF SUBJECT-MATTER STUDIES

EDUCATION is the process by which an individual becomes adapted to his surroundings and enabled to cope successfully with them to establish his welfare. Public education is a system by which organized society undertakes to provide for the education of individuals and to secure the social factors, aims and values in education.

The material on which the educative processes work is the nervous system. The nervous system is made up of individual living cells called *neurones*. Each of these consists essentially of a mass of protoplasm, a part of which is drawn out into two or more elongated processes or attenuated fibers. The nutrition of these neurones is cared for by other organs of the body through the blood and lymph streams. The neurones themselves have developed to a high degree the function of irritability which is common to all living protoplasm. Irritability means the ability or capacity to respond by some form of action or energy, to any change in the relations which exist between the organism and its environment. So long as the organism enjoys a harmonious and balanced relation with its environment, it is in a state of well-being and either remains inactive or continues uniform activity. A change interrupting this relation of harmony constitutes a stimulus to action or to change of activity. What the neurone does by way of response is to produce that chemico-physical phenomenon which we call a *nerve impulse*. The effect and purpose of the nerve impulse ordinarily is to bring about or inhibit muscular movement, secretion by glands, or other organic reaction.

In order that any such effect may be produced it is necessary that the nerve impulse be *transmitted* from the point of stimulation to the point of muscular or other reaction, a function served by the long fiber-portion of the neurone. Neurones are so constituted that they can and do transmit nerve impulses in only one direction. They have receiving poles at which stimuli from without or impulses from other neurones come in, and dispatching or effective poles along which impulses are sent out to other tissue elements. Neurones are connected with one another and with other living cells by intimate contacts or junctions in which the nerve impulse passes from one element to another. The primary function of the neurone is to throw into a non-nervous organ, whether muscle or gland, an impulse calling forth a reaction which will tend to secure the welfare of the organism with reference to the source of stimulation. Two factors already mentioned determine the formation of a *system* of nervous organs, the transmission of impulses in one direction only and the union of two or more neurones in chains to carry the impulses from point of stimulus to point of reaction. The one-way transmission is a limitation on each neurone, which results in definiteness and accuracy of functioning. The combination of neurones leads to division of labor and the efficiency of specialization.

The division of labor is evidenced and illustrated by the collection of neurones in

various parts of the nervous system to perform certain special functions, such as the collections in the spinal cord to form receiving stations for stimuli applied to the skin, collections in the lower parts of the brain to form receiving stations for impulses produced by sound waves striking the ear drum, or light waves impinging on the retina, collections in the cerebral cortex which receive such impulses at second hand and bring them into relation with one another, and collections in the brain and spinal cord which are concerned with the movement of the eyes or hands or feet to serve the general welfare of the organism. It is not necessary that we should know the size and form and arrangement of these collections of neurones or of the bundles of fibers which connect them in manifold fashions, much more complex than the most intricate telephone system or other mechanical device. It is only necessary for our purpose to remember that such special arrangements of neurones do exist, that they bear definite relations to the functions to be performed, and that the one-way transmission of impulses in any neurone renders the performance of each neurone a fixed and definite factor in the life of the individual.

The business of neurones is to be aroused by changes in the organism-environment relation, and to transmit impulses to active organs, such as muscles, whose action will bring the organism again into favorable or satisfactory relations with the environment. In the case of the person who burns his hand on a stove, the reaction is simple, direct, prompt and effective. In the case of the President or foreign minister whose nation is threatened with war, the reaction is complex, intricate, possibly slow and doubtful and its results are only evident after a long period during which the reactions of millions of people are aroused. Yet the nervous processes in the two cases are identical. A very young child is able to draw his hand away from a hot iron; only a very wise man can react to a threat of war effectively for the welfare of his nation. The difference between the two is the product of education. The mental states aroused or changed by the nervous reactions to stimuli and the manner in which an intellectual and moral person is built up by successive experiences, these are the subjects of study in a science of education.

For the performance and direction of the complex responses the nervous system provides a large number of neurones which are specialized for the business of correlating the impulses aroused in the various specialized centers for touch, hearing, sight, etc., and in those for various forms of movement or other organic activity. These correlating mechanisms have arisen later in evolution and have grown more and more important until in man they are the particular mechanisms which constitute the difference and fix the great gulf between man and animals —though this difference is one of degree and not of kind. The correlating mechanisms exist in all regions of the nervous system and comprise in particular all the "higher" centers in the brain including the cerebral cortex. It is chiefly and especially the constitution and functioning of these correlating mechanisms that is affected by education. It is the purpose of education to direct the development of the nervous system by determining the character of the environment from time to time during the growth of the child. By choosing, altering and controlling the environment, the parent and educator direct and control the growth of neurones and their connections with one another.

Early in the growth of the individual—before birth in the human being—there are formed most of the nervous mechanisms which control the vegetative processes—the

processes by which food is digested and assimilated, and so on. The processes by which the individual goes out into the world and gets his own food, clothing and other necessaries and comforts are learned by long and painful effort under the tutelage of parents or friends, whether the individual be a savage or a citizen of a modern state. It is the direction of these efforts that the state has undertaken in its system of public education.

Among the nervous mechanisms with which we need concern ourselves the first to be developed are the simpler receptive neurone-systems for the sense organs and those controlling the contraction of muscles. Later the sensory centers are brought into relation with one another, the muscles are controlled in relation to certain elements in the environment made known by the sense organs and the child begins to respond to changes in environment in such a way as to bring about his own welfare. In the course of time grasping, walking and vocal expression are learned and the child by his actions unconsciously alters his relations to his environment or alters the environment itself to his own advantage. All these things the animal does equally well and although they and their continuance year after year are vastly important for education, we are chiefly interested in those stages of development and experience in which the individual knows that he modifies his environment and comes to understand how he does so and how he can do so at will.

Before we can study these late developments in the life of the youth, we must understand two principles which apply in all evolution of nervous mechanisms. The first is the principle of *trial and error*, the second is the principle of *habit formation*. Biologists have shown that the method by which any specific adaptive action is accomplished in the behavior of the lower organisms is a series of haphazard trials, a random running about, hither and yon; until the desirable end is reached by accident. When movement in a certain direction brings the organism into favorable or comfortable surroundings or conditions we say that the action is adaptive or conducive to well-being. So long as these favorable conditions continue the organism goes on in its ordinary movements without special change or reaction. The same successful or satisfying reaction when repeatedly performed becomes a *mode* or *response* or a *habit* and the structures concerned in performing the action tend to become better developed and more efficient. Under constant conditions certain fundamental habits reappear in successive generations and become racial traits while the structures concerned tend to reappear early in the development of each generation in preparation for the performance of the habitual action. The mechanisms which are concerned with the most fundamental actions and with the organic and vegetative processes are the ones which have become fixed to the highest degree and which are first developed in the growth of the individual. The neurones of the spinal cord which control muscles involuntarily are developed before birth, those of the cerebral cortex which control the same muscles in a voluntary way are not functional until after the child learns to walk. Nervous mechanisms and habits which appear late in the race are less stable, more modifiable, and there is an appearance of trial and error before habits are formed and fixed. Here we have to deal with educable characteristics and we speak of the early habits and structures as inherited, while those appearing later are in part inherited and in part learned or acquired

through experience. While we can not raise here the question of the method of heredity we must hold in mind the struggle between the influence of heredity and environment in the determination of character.

The performance of the nervous system, including the intellectual performance of the man, depends upon the arrangement and connections of the neurones which make up the nervous system. It is by the process of trial and error that these neurones acquire their arrangement and the formation of habits is the outward expression and evidence of the fixing of permanent connections. Each neurone is to be compared with one of the lower organisms. At first the neurones are merely egg-shaped masses, devoid of long processes or fibers. The formation of functional neurones consists in the growing out of the fibers from the cell-body together with the development of certain internal structures concerned with the origin and transmission of nerve impulses. As the fibers grow they are very plastic, they branch and push out hither and yon, coming eventually into contact with other neurones or other cells. Connections of various sorts may be set up and when impulses begin to run through these neurones the resulting reactions are haphazard, contradictory, chaotic. In the simpler and earlier structures this phase is passed through before we can observe it and we first come to know the human nervous system after certain structures and tendencies—which we call hereditary—have been fixed. The later and more complex nervous mechanisms, however, develop through the period of youth under the influence of trial and error. The chaotic character of the reactions in early stages we observe in the infant's learning to walk and to talk. As nerve impulses run through the various paths set up by contact between neurones some of these channels lead to reactions favorable to the organism. On the repetition of the appropriate circumstances the same chain of neurones again carries an impulse which results in comfort and well-being. Further repetition makes these pathways the easiest or the dominant ones and the contacts between neurones become permanent functioning connections or *synapses*. When this stage is reached a mode of reaction, or habit has been formed. This occurs first in the lower centers and last in the cerebral cortex, but it is a process which may go on in all parts of the nervous system certainly until adult life. In the cerebral cortex of some individuals it probably goes on almost throughout life.

While we know nothing of the course of development in those fundamental responses and structures which govern the vegetative processes, beginning with walking and the free play of the infant the element of trial and error, of correction, of modification of response and structure by experience, increases until in the adult the element of inherited habit and structure is relatively reduced;—so much so that an occasional man will tell you that everything depends upon education or environment and nothing upon inheritance. The nervous mechanisms that become fixed in the adult are chosen out of the haphazard neurone connections as the ones which carry out useful responses. Thus modifiability is slight in fundamental primitive structures and greatest in the late and most cultivated characters. Modifiability of the nervous system measures the range of possibility or capacity of the individual.

In order to gain the end or aim of education it is necessary to select the types of environmental contact or impact suitable to modify or direct the development of the nervous system at each stage in the growth of the child. This is a statement of the

essential problem of education. The problem is not simple. It is much more than a question of what kind of stories are suitable to a child of a given age, what arithmetical work is right for the fifth grade, at what age languages are most easily learned, or at what age history and geography find the most active response. The question is by what means can the inherited nervous system be influenced to the richest development of which it is capable. The main question is not one of *subjects of study* at all and only to a secondary degree one of cerebral activity even.

In early years the cerebral cortex is not sufficiently developed to offer a field for immediate impression by environment. Indeed the cerebrum can not receive an *immediate* impression in any case. Impressions can reach this seat of thought and feeling only by being first received by sense organs, reacted upon by lower nerve centers and later relayed to the cerebral cortex. The business of the cortex is to bring into comparison and relation impressions of various sorts and from various sources. It is only by this correlation of impressions with one another and with past impressions that meaning can be put into them. Moreover, the cerebral cortex never deals with simple impressions. Not only are simple impressions brought into relation with one another but the organism *responds reflexly* to the impression in an appropriate manner. The response is itself an expression of the relation and capacity of the whole organism and this response sends new impressions into the cortical nerve centers. Successive responses bring new impressions to the cortical centers and the comparison of these gives rise to the consciousness of self and the choice between possible actions.. Thus active responses to the stimuli coming from environment furnish the conditions necessary for the development and fixation of the nerve pathways spoken of a little earlier. This is the significance of that restless, eager play of the healthy child. The richness of the nervous system in fibers and functional conditions depends to a very large extent upon the physical activity of the young child. Out of these oft-repeated and constantly varied activities arise the manifold permanent nerve connections which provide for carrying out appropriate responses to any new stimuli received. When the conditions are simple and relatively unchanging the variety of responses demanded is limited and the same actions are performed more often. These actions become the typical modes of response, or habits. The formation of a habit means that the neurones concerned with certain relations to environment have become fixed, and further growth and adaptation in them is rendered difficult or impossible. Simple and monotonous surroundings in early childhood lead to fixed habits of action and to limited intellectual life, because these conditions put early limits on the growth in richness and complexity of nerve structures. From all of which it appears that the first duty of a system of education is to create such an environment for the young child as will produce *practise in responses* to changes in surroundings.

Out of the perceptions which the child forms during his free play the neurones of the cerebral cortex create concepts of objects related to the active self. These concepts of objects will be useful and valuable in proportion to the accuracy and number or variety of the perceptions out of which they are formed. Thus the poor little rich boy in the nursery might have seen a light-not-very-hard-something-as-large-as-his-head, while to his neighbor boy in the back lot the same object is a football with

all the delights and healthful sport that go with it. The chief difference here lies in the relation of the object to the active self, the organism responding to changes in environment and thereby creating a new environment. For it is this interplay between organism and environment which furnishes the conditions for ever new activities and postpones the premature formation of habits and consequent limiting of nervous development.

To the active child in free play his surroundings yield often repeated perceptions through all his sense organs. His perceptions become accurate through repetition under varying circumstances and his objects are full of meaning by reason of the many qualities which he attaches to them. In his activities, then, are found the basis for reflection, deliberation, choice and rules of conduct. It is only as the lower nerve centers are given practise in perception and responses that the child has the material for these intellectual and moral ends of education. Activities, not passive observation, reflection and memorizing of formulæ, are the means of directing or educating the nervous system. The number and variety of active contacts with environment directly determine the richness and meaning of the intellectual life. The second great duty of the educator, then, is to provide the conditions for *extended and varied experience*.

Only after practise in responses in the midst of a wide and changing environment have been secured can the educator begin to think of building ideas. The child must first have through his active experience a world of objects and a large number of relations between himself and the objects around him. When the child begins consciously to modify his objects and their relations by setting one object in motion against another; when, in other words, he begins to use his objects as tools to alter his environment, he is ready to analyze his objects, to measure and weigh them, to reflect upon their qualities, to consider changes and combinations in his objects favorable to himself. These processes can not go far by the simple methods of manual experimenting, of trial and error. They require certain tools of thought: number for measuring size, position and weight, language for describing other qualities, writing, drawing, map-making, modelling and sculpture for recording other impressions and observations. These are the *tools of knowledge* and usually constitute the material of *subjects of study*. They can find materials to work on only after play and manual experience have been sufficiently developed. To deal with these tools only as represented by characters in books is merely to play with the symbols of things which are themselves unknown. This is the reason that we find among college students so little intelligent appreciation of the meaning of work done in scientific laboratories. As reflection and reasoning develop, the subject-matter studies may occupy a larger and larger part of the attention. The third duty of the educator is to introduce the child to the use of the *tools of analysis and reasoning* as fast as his experience with the physical world gives him occasion and power to use them.

With this preparation we may now address ourselves to the specific problems of the public educator. The main question is the relation of the manual, physical and creative activities and the reflective, analytical and descriptive studies in the whole scheme of education. If what has gone before is true it is clear that the former activities constitute in the earliest years the whole[1] of the educative methods and

[1] Activities outside of school hours must not be overlooked. Many children owe the larger part of

that in later years these diminish in importance while the latter group became increasingly more important. For the great majority of persons, however, the active element remains important and essential throughout life. The experience of doing, handling and making is necessary to the average man in arriving at the meaning or significance of objects, relations and changes in his environment. The metaphysician can perhaps work with perceptions alone, the ascetic can build a system of morals upon mathematical formulae or a few logical or ethical postulates (assumptions), but the man of breadth and clarity of vision, of poise and sanity of judgment, and of decision and foresight in action owes his character to the training which his nervous system receives in the action and reaction between him and the physical and human environment.

The great question for the educator at the present day is not what subjects to teach but whether to teach subjects at all, and when and for what part of the pupil's time. The most futile discussion has raged and is raging over the relative value for mental discipline and character building of the various subjects of study. With regard to this question I am neither classicist nor modernist, neither humanist nor scientist. All subjects of study when made the primary and chief work of the child are alike artificial and devoid of adequate foundation and content. These subject-matter studies have two clearly marked functions in education. One is to develop tools for the analysis and description of the environment and the qualities of its units or elements. The other is to develop the methods by which the pupil abstracts the qualities and relations from the physical objects of his environment and reasons about relationships of similar objects wherever and whenever found. The tools for analysis, namely, number, language and other forms of description, the child can best learn by using them in his active and creative work or play with physical objects. The child in his earlier years should be engaged in work and play in which he will be brought into contact with the physical world in its most manifold phases. This can be done through some of the many branches of agriculture; through the manufacturing (hand-making) of any of the useful articles or utensils of modern home and social life (mats, rugs, curtains, woodenware, furniture, crockery and pottery, etc.); through the buying of materials and the selling of products of the work of the school. Throughout this work there will be presented the opportunity for the use of arithmetic and later of algebra and geometry, and the mathematics thus *used* may readily be made to comprise all that the pupils needs to know until he passes beyond this stage of development into the work of generalizing or scientific study. There is in this view no place for arithmetic as a subject of study. The activities are necessary to the development of the pupil's nervous mechanisms and the arithmetic is acquired while being used as a tool along with the hoe and saw and square. Arithmetic studied out of a book for the purpose of learning it, is an abstraction which has no place in this stage of the child's life and which never becomes the effective tool it should be for the mastery of the environment.

As arithmetic used in conjunction with instruments for measuring and weighing is the chief tool of analysis, so language is the chief tool of description of the environment. With language we must include, however, all forms of vocal expression and even instrumental music, as well as all

their education really to their experience outside of school during the school years.

forms of drawing, charts, maps and pictorial representation. For most of these are necessary to the presentation of the form, size and relations of physical objects and the rest are necessary for the expression of the relations of these objects to the observer and the emotions which the recognition of these relations arouse in the individual. No one doubts that speech is most readily learned in everyday work with things. Neither is it a far step to say that writing is most easily acquired as a tool in recording observations or measurements in doing and making. Indeed, writing might well be preceded by simple drawing and both should wait for manual dexterity to be developed by other work which should be done before writing becomes necessary as a tool of nervous and mental development.

As spoken and written language is thus developed in early life as a means of describing things and actions and of recording observations and experience, this is the most natural and economical time for a second language to be acquired in addition to the native language. And it should be acquired by use just as the native language is. Under ideal conditions of teaching the two languages would both be, for the child, essentially native languages.

Acquaintance with environment requires something more than the activities of making and doing things together with the analysis and description incident thereto. The local environment may become fairly well known through the work and play before described. The immediate needs of the constructive work and especially of buying and selling require a wider knowledge of the surrounding country from which materials come and to which the products of the school are sold. This means geography beginning at home and under the influence of the social and industrial relations of the child and the school. As the commercial interests extend, the world market and world geography come into view hand in hand.

In the meantime both the home and the school have developed social relations and moral values. The child finds that his commercial interests also are subject to certain moral principles and regulations (laws) agreed to by all people. Starting from the school-complex of industry, social values and local government, the recognition of world commerce and world geography leads to the study of world history. What has been the origin of these accepted customs governing the quest of the individual for bread and a habitation? How are the other nations of the world governed and how have their governments grown up? How does our government differ from theirs and how has it come to be as it is? Thus history comes into the range of the child's interests and may claim an indefinite portion of his time in later years of youth. This is studied from the printed page largely by the aid of maps and other means of description and only after the child has learned the use of these tools and developed his powers of reflection and generalization.

Still other interests early grow up in the mind of the child. These should furnish material for a large part of every child's education but the extent to which they will be followed will be largely determined by the inherited traits and capacities. I refer to the scientific interest in nature. This is a direct outgrowth and continuation of the child's early play and questioning of the objects about him. In connection with the various activities before mentioned he has need to continue the questioning about the existence and relations of objects in nature. In agricultural pursuits he has need to know about many plants and animals in addition to those actually propagated by

the school. If he works in pottery he needs to know the constitution of his clays and their relation to other components of the earth's crust. Girls interested in cooking and household arts learn many of the chemical and physical characteristics of the materials with which they work, and laws of the processes in which they are engaged. I need not develop this farther. It is evident that every child may and ought to acquire during his school years a natural acquaintance with and usable knowledge of the animals and plants of his vicinity, their habits of life, the benefits or harm which they bring to man. He should learn much of the composition of the earth's crust and of the constitution of matter especially in relation to the affairs of everyday life.

Finally, more or less closely related to all the child's work of which I have spoken, there are in addition to the social and moral interests, certain esthetic values. There is an aspect of pleasure or discomfort in all his activities. There is a pleasure found in harmony of color, form and movement, whether in gardening, cooking or cabinet making, and there is a natural tendency to strive for comfortable and pleasurable conditions of work. From this the child wishes to know what it is in his surroundings that gives him pleasure and how to cultivate these conditions. He should be encouraged first to cultivate these esthetic elements and later to analyze, describe and reflect upon them. Here grows up a study parallel with his study of history and social organization.

If you have at first thought that I, while denying that I am either a classicist or a modernist, must be an advocate of the manual arts and trade-school, I hope I may have dispelled that illusion. I can perhaps describe my position by saying that I am simply an evolutionist but not a culture-epochist—an advocate of human culture through experience and not chiefly through the humanities. What, then, is the place of the humanities, and in particular of the classic languages in the system of education?[2]

I hope I have suggested to you in an intelligible manner how arithmetic and language are to be used not as subjects for study out of books but as tools in the cultivation of the human organism. The human organism is social and esthetic as well as mechanical and food-consuming. Furthermore, the development, organization and control of the social, industrial-cooperative and governmental forces in human life require that many members of society make some advance into the fields of scientific study of the tools of mankind and that such scientific studies be followed by a few to the very limits of the possibilities of the human mind. No matter what field the individual enters, the tools of his study and transmission of his results are still mathematics and language in the broad sense which I have indicated before. As in some fields he will require higher mathematics, so in any field he will require the use of refined and accurate language and other means of description. It is chiefly as vehicles for the transmission of thought that languages must be acquired (rather than as tools for thinking). The child who is to become an educated man will profit by the possession of two or more languages of cultured nations in addition to his own. More important, the educated man, especially if he is to contribute anything to the knowledge of his fellows, must be able to use one language with the greatest possible

[2] This paper was written for an association of teachers of classic languages and is printed here as read. The paragraphs dealing with Latin and Greek may serve a purpose as showing that even these debated disciplines may have a place in a realistic scheme of education if that is based on sound scientific principles.

accuracy and clearness for conveying his thoughts. Such accuracy and clearness can be acquired only by practise and study of the best usage of his day in addition to an intimate acquaintance of the structure and evolution of the language. I need not pursue this topic further with this audience.

Moreover, Latin (or Greek) is the bearer of precious thoughts and historic facts that are not well understood in the translations of others. Latin has been the medium of expression of poetic fancy, of ethical principles, of religious enthusiasm, of esthetic ideas which some men should read in the original if they are to use them in their own studies and creative work along similar lines. Not only this, but moral, religious, legal, esthetic concepts couched first in Latin phrases in poems, essays and orations have permeated our thought and our life by way of the evolution of our language, to such an extent that all educated men have a clearer understanding of these concepts and of the meaning of their fellows as they bandy these ideas about in speech and writing, by reason of having read Latin in their youth. This is true, I think, even if the teaching was bad. Even after teaching so bad and so narrowly conceived that for many years his Latin study was believed to have been a waste, even after apparently forgetting all his Latin, your speaker still believes that he retains some benefits from the study of Latin, and from Greek also.

Some one must answer the questions as to who and how many should study Latin, at what stages in their education and by what methods. At this late hour I can only say that not all pupils but rather the few should study Latin. Probably all those who are likely to go on to higher education should have the advantage of Latin. This question will probably be settled for a while by the interest and more or less intelligent choice of parents, later on the basis of ability and because of the decision of society to offer higher education to the capable individuals. I am attracted by the direct method in the study of Latin and I am inclined to think that by this method it could be consistently introduced into such a system of education as I have outlined as a second or third language to be begun after the native language is well in hand as a medium for the expression of simple observations and actions, and at the stage when the work of analysis and description begins to play an important rôle. Soon after this stage the entrance of Latin roots into the words which the child must use for the accurate description of his objects and their qualities, can not fail to interest the pupil and to give the ground for improvement of his use of the native language.

Education begins with physical activities —work and play with natural objects and with a view to self support and comfort, as in agriculture and hand-crafts. In these employments the child uses number and language as tools. Later the process of education turns to the analysis and description of the world of nature and of the child's own activities. This is extended to world-geography and world-history, to zoology, botany, chemistry, physics, geology, to society and government, to literature, art, music and the esthetic side of the child's nature.

Throughout this period the chief and fundamental part of the child's education consists of economic work, of producing or making valuable goods and selling them to help pay for his living and instruction. All this work is done under the guidance of laws, natural laws of physical objects and processes; and laws of social relations, partly natural and partly enacted legislation. Under these conditions the child becomes a social being guided by moral principles—an important part of his education.

When the youth has acquired the knowledge of and adaptation to his environment that has been implied, he is ready for the scientific study of the laws underlying the phenomena daily observed. The program of activities and studies here outlined would give the average youth a much broader knowledge, wider experience and more effective discipline of mind and heart than our present school system affords. He is now prepared for college and it is not my purpose to follow his education further. If he does not go to college, he passes on into the industrial and social life of the community without a break.

J. B. JOHNSTON
UNIVERSITY OF MINNESOTA

LIBRARY PROMOTING[1]

"THE one best thing in camp" is the way many men and officers in our far-flung line of camps speak of the camp library. They mean it, for if an American military or naval camp is anything it is democratic and plain-spoken.

The success of the American Library Association Library War Service is the result of library promoting. Perhaps many of the participants have not been conscious of their part in this job of library promoting. Because of this, and because at the beginning of a thing that had never been done before perhaps no one could see the end, there have been mistakes. No one in the Library War Service claims perfection for it. That is part of its genius: it has been done in the best way possible at the moment, with the materials at hand, by a changing personnel, and with changing methods—just frank human service. It really had no preconceived plan except to give the boys what they wanted and needed in the world of print.

[1] Address before New York State Library Association, Lake Placid Club, N. Y., September 27, 1918.

The story of camp library promoting has many lessons for library promotion in peace times. Following is a story of things that happened in a camp or two, typical of all.

The military camp where the departing commanding general went to the camp librarian in person to say that he had been wrong in his initial belief that the camp library was unnecessary and that on the contrary it was one of the most valuable things in camp—that is a story of highly successful library promotion.

Then there was the grizzled old naval commandant, who barked at the newly arrived librarian, "And are there many other young men like you, introducing libraries instead of shouldering a gun?" Three months later this naval veteran held the hand of the departing librarian, thanking him for his great personal and educational contribution, not merely to the recreation of the sailors, though that was recognized, but to the *training* of the sailors, and begging the librarian to come back and complete his educational training program based upon library service.

At the beginning the camp librarian got sixty or ninety days leave from his regular job. He rode into camp and perhaps put up for a night or two at the "Y" headquarters. Likely as not the "Y" camp secretary told him there was nothing for him to do in camp. In most camps, however, in all fairness, the librarian was greeted eagerly by the "Y" man, even as a long-lost brother. Next day, perhaps the camp librarian was told by the commanding general that the boys would be so busy drilling there wouldn't be time for books—"but come on with your books, anyhow; we'll help you, and we're glad to see you."

Probably a store-room full of miscellaneous boxes and piles of books and old magazines was the next thing to greet the camp librarian, who was now armed with a mili-

tary pass, a gray shirt, a pair of khaki trousers, a pair of leggins, some old tan shoes—and a sinking sensation. This was in the days before even "Headquarters" at Washington had opened.

In another camp, the librarian hunted up his books in a Quarter Master warehouse, got an army tent and a truck from the Quartermaster, and set to work in his tent, sorting his books—again with a sinking sensation, particularly on opening certain boxes.

In those early days, the camp librarian got his bearings from such questions as these: "Can't you send us some algebras and trigonometries? The men have got to learn how to figure gun ranges." "Haven't you some modern poetry, Kipling or Riley or Omar Khayyam?" "The major has set a bunch of us to surveying the electrical transmission in camp; got anything on that?" "Say, we've got seventy men in our regiment who can't read; have you got any primers?" "I'd like to read Harold Bell Wright's latest book." "Say, we'd like a dictionary in our building, like you gave to Number Five." "The Chief of Staff would like an atlas and a World Almanac in his office, if you have them." "Say, has this here library got any of them Tarzan books?" Most of these requests were filled in the course of the sorting, and the sinking sensation of the camp librarian changed to a heart-thumping, the original thrill: "Why these men want everything under the sun in books, not just fiction. And they want it for their business, their drilling and fighting, not just for fun. And if I can just get the books, and some help to sort these magazines, and a truck, and enough room to work in, and a stove to keep warm with, I can get this whole camp to use books!"

In those days the camp librarian sent out collections to the Y. M. C. A. and K. of C. huts, without cards, without pockets, without lists. The "Y." and K. of C. men wrote the cards and put in the pockets, and promised to list the books. The books may not be listed yet—in most cases they are—but they've been worn out by a year's use. The camp librarian made it easy to get books. With a modicum of record and red tape he reached the whole camp.

As the days and weeks passed, the Ford was bought, the purchased books began to arrive, the library building was completed and formally opened, and the men began to pour in to their home of books.

Then one day the camp librarian had an idea. That School for Intelligence Officers ought to use the library books on map reading. Did he write an article for *Trench and Camp*, saying, "All good officers should know and use our books on map reading?" Or did he print a card, saying "Have you read so and so?" On other occasions he used these and other advertising methods, but not this time. No, he went to see the Assistant Chief of Staff, in charge of intelligence, and said, "I've come to see whether the camp library may not help in the work of your School for Intelligence Officers. We have a staff of experts at Washington, in charge of our book selection, and I imagine we have about all the good things on scouting and map reading. Would you like to look over this list?" The major cast his eye over the list, at first with hesitance. Then he hitched up his chair, grabbed that list, turned up the other military subjects, and then ejaculated, "Great Scot, I didn't suppose you had all these books. M—m—m, there's a corker! Say, is that book in now? Have you got a car? No? Will you ride down now in my car and send back that book by my orderly?" The major got his book, and with it a great respect for that library. And the School for Intelligence Officers got

its deposit of books for their special work, and with the books a great respect for that library—because the library sized them up, divined their need, and brought itself to them.

The camp library approached the other official and service organizations in camp as a cooperating social agency. It said to them: "We are necessary in your work, not for our own sake, not for our own credit, not for your sake or credit, but for the sake of the boys." It said to them, "We'll arrange our service to fit your needs. If you want a truck load of magazines in half an hour for the boys on that troop train, you shall have them. If your boys want the evening paper in the evening, we'll put on an extra delivery. If it's wireless you want, and novels you want, we can accommodate both of you." It said to the Y. M. C. A., "Sorry to hear your truck is out of commission; don't you want to use ours?" It went to the Y. W. hostess house, on the edge of camp, and said, "Don't you want some entertaining books for your transients?" It went to the commandant of engineers and said, "Here's a bunch of books your office staff will find useful. Use them. When you are through with them, we'll be glad to have them back, but first get the good of them." It said to the Y. M. C. A. educational secretaries, "Wouldn't you like to have us digest the magazines and newspapers for you, and make suggestions for bulletin boards, news talks, and interesting lectures for your boys?" It said to everybody within and around camp, "Our business is books, magazines, maps, anything printed. We've got a monopoly of this service, but our monopoly is solely for you and your men. Come in and use us." And all the organizations and all the men in camp, to use camp parlance, "hand it" to "those A. L. A. fellows who are so free with their books which help us do our work."

Further illustrating this social cooperation of related camp activities, there is this story: In one of the southern camps, the Knights of Columbus automobile makes a trip twice each week, to convey Y. W. C. A. girls from the neighboring city, to the camp library, to prepare books for the Y. M. C. A. huts. After the war, shall we not see more of this cooperative promoting of each others' interests by social agencies?

The camp library has discovered that the American people is much more interested in reading than was generally supposed. It has discovered that the average man reads better things than he was given credit for. It has discovered also that more men than anybody thought can not or do not read at all. These statements are borne out by the continued strong demand for poetry, for biography, for philosophy, for everything technical and military, and for primers and spellers.

The camp library has discovered that more things than books and magazines are the reading material of libraries. Bulletin boards, maps, pamphlets, trade catalogues —all these can be read, and men read them eagerly. For we are learning that reading is not merely putting a book in a man's hand.

The camp library has promoted reading somewhat after this fashion: First it makes an intelligent survey of its field, the number, the general composition, and the army or navy specialty of each unit. Thus it bases its service on knowing and having and sharing what is needed. Then it creates a certain intangible but active atmosphere of cordial interest in the man and in his need or desire. It talks informally and spontaneously and enthusiastically about its books. It goes to the shelves and shows books to men. It takes down a man's

name and sends for what it doesn't have. It goes to the "Y" and talks about books and what can be gotten out of books. It puts up maps and pictures of the moment, and it connects these displays with its shelves rather by word of mouth than by printed lists. It catches the man on the run, and stops him, because here is something for his very own self. Then having caught the man's interest, it makes it absolutely easy for him to get the book. It lets him alone till he is through with it. Only his signature and company address are necessary. Yes, the camp library loses books, for war is war, but it gets books read.

As an additional means of making it easy to use books, some camp libraries have made it possible to return a book to any library branch in camp. Once a day the library truck calls at each branch and collects the books for delivery at the points of origin. This universal interchangeability is a real service, and an element in library promoting.

The development of this informal democratic educative attitude is perhaps the greatest contribution, thus far, by the camp library to librarianship. This attitude must have a large influence in library promoting of the future. Its informality is in its directness, its elimination of non-essential records, its hand-to-hand methods. Its democracy is its appeal to every man, its cordial personal interest in his problems, its educative value is its active sense of where a man's interest lies and the adaptation of library method to fit a book to that interest. The camp library is a success in promoting the use of books because it is informal, and democratic and educational.

Eventually, the supreme contribution of the camp library will be the training of four or five million men, the future leaders of the country, to know what a library is, to know what it does for men, and to respect it, whether they use it or not. Many of the most influential of these men will have become users of libraries, and will demand more or less the same facilities and attitude from the home-town library as they got in camp and over there. In other words, when our boys come home, the soil will have been plowed and the seed sown in good ground, and it will be for the village and city libraries to reap the harvest of appreciative library users and of their support.

The practical question arises: How shall we obtain the support necessary for library service of the sort here suggested? The real test of the value of any public service is how much the people will pay for. A year ago the American Library Association went before the people and said: "Organized library war service has never been done before, but for a million dollars we can put a million books into the hands of a million men." The people gave us a million and three quarters, and we have put three million books into the hands of two million men. In future library promoting can we not be equally definite and scientific? First, find what our public specially cares for and will pay for. Then say to our public, "For so much money the library can render this much service; how much service does the public want?" We shall have to be more daring in our library promoting. For example, many more libraries should have a Ford and should use it. If the village grocer delivers, why not the library?

In peace as in war, library promoting is simply librarianship. An important element of librarianship is to put as little as possible between the man and the book. This is informal democratic service. It is essentially educational in attitude. It is based upon a continuous intelligent survey of the field served. It joins hands with every other social force. Above all, it takes

itself seriously and is active in its promotion of all good things, especially good and useful books.

Reconstruction after the war will bring changes to libraries as certainly as to other social and economic and political organizations. This paper has attempted to point out some of the methods of library promoing used successfully in the emergency of war. In peace, not all these methods will be taken over. It is rather the promoting spirit of the A. L. A. Library War Service that may be most worthily emulated in the piping times of peace.

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KANSAS STATE NORMAL SCHOOL,
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EDUCATIONAL EVENTS

EDUCATION IN THE BRITISH ARMY

THE Adult Education Committee appointed by the Ministry of Reconstruction to report upon education in the army has presented a second interim report. We learn from the abstract in the London *Times* that the committee, of which the Master of Balliol is the chairman, makes a series of recommendations, to the majority of which practical effect has already been given in the War Office scheme. Thus, the committee recommend that education of a general character should be regarded as an essential part of the training of A.IV. men (recruits aged eighteen), and that voluntary provision on similar lines should be made for older men. A permanent resident officer should be attached to each area to give continuity to the work and to coordinate the work of voluntary bodies with that of the military authorities and of the local authorities. It is also suggested that facilities should be given by the army council to local education authorities and responsible voluntary organizations to carry out systematic courses of study in convalescent hospitals, to the larger of which a permanent staff of qualified officers should be appointed. This is a feature of the War Office scheme already in full operation.

The committee goes on to say that "on demobilization, officers, non-commissioned officers and men of proved capacity, desirous of pursuing a course of study at a place of higher education, should be given an opportunity to do so, and the necessary financial assistance should be provided for this purpose." It is urged that ample provision for education should be made for the period after the cessation of hostilities—the report is dated July 3—and, while this provision might include technical training, the curriculum should be based upon those subjects associated with citizenship. Training courses for teachers are suggested; these, again, have been in existence for some time. As the authority ultimately responsible for education in the army is the War Office, the committee takes the view that the necessary financial provision ought to be included in the War Office Vote, but that the schemes and regulations should be submitted to the board of education for their approval, and carried out with their cooperation. The committee expressed a wish to see an education branch of the War Office established. Since a branch has been in existence for some months under the directorship of Colonel Lord Gorell.

At a meeting of the London Education Committee it was agreed to recommend to the County Council that facilities should be provided for the instruction of soldiers, on the basis of payment by the War Office of out-of-pocket expenses, or alternatively on the basis of the admission of soldiers to existing classes on payment of the fees charged to ordinary students. The recommendation was agreed to.

The committee recommended the council, subject to the concurrence of the board of education and the University of London, to approve a scheme drawn up by the principal of the London Day Training College for the training as teachers of war students, whether men or women, whose normal course has been rendered impossible by war service.

WISCONSIN AND THE OVERSEAS SOLDIER-SCHOOL SYSTEM

A COMMITTEE of Wisconsin educators is now busy selecting the 57 school administrators

which the state has been asked to send to France to aid in the great school system being established for the 2,000,000 American soldiers now overseas.

They are seeking administrators, rather than teachers. The work needs 2,000 college and normal-school presidents and faculty men, high school principals and other school directors. Teachers are being found among the soldiers.

University studies play but a small part in the program. The army teaching is being developed into a great common school system with three branches: industrial and vocational training for about 40 per cent. of the soldier-students; common and high school education for about 50 per cent., and university and other special studies for the remainder. Soldiers who desire to study law, medicine or other graduate studies, will be sent to French or English Universities—perhaps, 50,000 of them.

The school system is divided on army lines into eight main regions under regional directors. Each region includes numerous divisions whose school heads will correspond to county superintendents. Within the divisions every Y. M. C. A., Red Cross, K. of C. and Salvation Army hut will be a schoolhouse under a school principal, aided by soldier-teachers.

It is for these administrative positions that men are needed—men who are under fifty, physically fit, and willing to go to France on the usual Y. M. C. A. terms which provide uniform, maintenance and a moderate home allowance for dependents. As it is expected that a great share of the army will be in France for two years and as every soldier is eager to devote the idle time to study, an energetic campaign is being waged in each state to find the necessary administrators.

In Wisconsin, the recruiting is being assisted by State Superintendent C. P. Cary; Presidents V. E. McCaskill, Superior Normal; A. H. Yoder, Whitewater Normal; Samuel Plantz, Lawrence College; M. A. Brannon, Beloit College; F. E. Anderson, Y. M. C. A. state secretary, and Professor E. A. Gilmore, University of Wisconsin.

AGRICULTURAL EDUCATION

Some of the problems which arise in the administration of the Smith-Hughes Act as it touches agricultural education are discussed in this Bulletin 26, just issued by the Federal Board.

Part I. was prepared by Layton S. Hawkins, chief of the division for vocational education. As the board deals with the work in a state solely through its own state board, a general outline of the directional and supervisory duties is here given, which may be adapted to the widely varied needs of each state. Teacher training and supervision, being two factors essential to the success of any plan fully discussed.

The relationship between teacher-training and supervision is the subject of Part II., which was prepared by George A. Works, professor of rural education, Cornell University. Two plans of organization are described; in the first, one person undertakes the duties of both supervision and teaching, but the writer points out the advantages of a second plan in which the responsibilities are divided.

Part III. treats of sectional conferences and professional improvement. Rufus W. Stimson, State Supervisor of Agriculture, Vocational Education, Board of Education, Boston, who prepared this section of the bulletin, points out the qualifications and aims of the successful teacher and stresses the advantages of constant contact with up-to-date agriculturists and leaders in this line.

Other problems are dealt with in this bulletin which must prove of interest to those interested in vocational agricultural education either as instructors, supervisors or administrators.

THE JOURNAL OF NATIONAL SCHOOL SERVICE

Professor W. C. Bagley, editor of *National School Service*, a publication organized by the Committee on Public Information for the purpose of stimulating civilian morale, reports the aims of the undertaking to the *Teachers College Record* in the following statement:

National School Service is published by the Committee on Public Information twice each

month during the school year. It is distributed to every public school building in the United States, a sufficient number of copies being sent to supply one to each teacher. Consequently, the circulation reaches 700,000 copies. The enterprise is one of the most extensive that the government has so far taken in the interest of civilian morale.

The chief purpose of *National School Service* is to take directly to the teachers official information concerning the causes and progress of the war; the aims of the government in its prosecution; and the needs and programs of the official and semi-official war enterprises that have been working through the public schools—the Liberty Loan and War Savings Committees, the Red Cross, and the United War Work Agencies. It aims to serve as a "clearing-house" for the school programs of these agencies, to prevent needless duplication of effort, and to safeguard the schools against unnecessary interference with their regular work.

Because of the varied needs of the several grades and types of public schools, five departments were formed: general (including the history and progress of the war); rural schools; primary grades; intermediate grades; upper grades and high schools.

National School Service is under the general direction of Dr. Guy Stanton Ford, chief of the division of education of the Committee on Public Information. Dr. W. C. Bagley, of Teachers College, is editor, and F. W. Searson, of the Kansas State Agricultural College, is managing editor.

YALE UNIVERSITY ON PEACE-TERM BASIS

CARRYING out the war-time division of the year into three thirteen-week terms, the university opened for its second term on January 2. Last September a pretense was made of beginning the university year, but it was only a few days before the great majority of the classes of 1922 and 1921 S. and of the relatively few returning upperclassmen had been voluntarily inducted into the service as members of the Students' Army Training Corps and the United States Naval Unit at Yale University. At the college freshman reception President Hadley said:

It is a great thing to get back to college life, and no one knows better how fine a thing it is than those who have been with Yale during the war period. From the time when the first Yale Battery went to Tobyhanna until now we have been and are proud of Yale's record. It has been an inspiration, but it has been a strain as well as an inspiration. There is corresponding relief and joy to be back to the old ways.

Yet no nation goes through a trial without making changes. The changes in the national life after the Civil War were great, and the changes in the colleges—beginning with the men who entered in 1865—were equally great. I will not describe in detail what the changes in college life which will come as a result of the new arrangement of courses will be. Frankly, I do not know. But I do know what Yale must learn.

This war has been a test of national methods. The German methods were superior in many ways but failed in the fundamentals. However, we must learn from Germany to adapt means to ends. In education, for instance, each man in Germany as he developed linked up his studies with the outside world. Thus a man had both personal and patriotic motives in his study. There was no such adaptation of means in England. There was no such opportunity at Oxford or Cambridge for the country to utilize the colleges. The studies were not made vital to the nation. We must develop so that in the university we are making study a preparation for citizenship. We have had a good example of this twofold—personal and patriotic—motive in Yale's experience in field artillery work. We are proud to have "made the connection" in war; now we must make the connections in peace.

But there were larger things which the English universities had. Each college, each public school was a home of tradition and sentiment, which made schoolboy and student a gentleman uncontent with mean ideals. And the place that made gentlemen won out. Yale's traditions are not so old nor yet so picturesque as England's, but nevertheless you fall into an inheritance which makes life here a piece of poetry in a world of prose. Now there is a danger that in changing our curriculum the prose may crowd out the poetry. But on the other hand you will be largest in poetry if you can get it while throwing yourself into the life of the times, keeping the poetry while getting the prose. We have got to learn—in cooperation— to adapt our studies to

efficient ends. But at the same time we must keep our personal ideals pure and our national ideals true.

EDUCATIONAL NOTES AND NEWS

L. N. HINES, for the past ten years superintendent of schools at Crawfordsville, Ind., has been appointed State Superintendent of Public Instruction for Indiana.

WE learn from *The School Board Journal* that Dr. Carter Alexander, formerly professor of school administration in the Peabody College for Teachers at Nashville, Tenn., has entered upon his duties as assistant superintendent of instruction for Wisconsin. Dr. Alexander succeeds J. B. Borden who has become dean of agriculture for the University of Wisconsin.

EDWIN G. COOLEY, formerly superintendent of schools at Chicago, Ill., and more recently with the Red Cross, has been placed in charge of the continuation school system.

MR. EDWIN WOLF has been elected president of the Philadelphia board of education for a second term.

DR. JOHN M. WITHROW has been reelected president of the Board of Education of Cincinnati.

THE Reverend Edward P. Tivnan, S.J., professor of chemistry and regent of the School of Medicine of Fordham University, has been appointed president of the university, succeeding Rev. Joseph A. Mulry, S.J., who retired because of ill-health.

DR. JAMES W. CAIN has resigned the presidency of Washington College, which he filled for fifteen years, and accepted a position as vice-president of the United States Fidelity and Guaranty Company.

PRESIDENT A. ROSS HILL, of the University of Missouri, has been appointed chairman of a committee of the State Council of Defense on reconstruction. The committee will deal with labor, educational, economic, commercial and political problems arising from conditions following the war.

DR. WILLIAM F. RUSSELL, dean of the College of Education of the State University of Iowa, who has been in Russia as the educational expert with the Committee on Public Information, is expected home in the near future to present the Russian educational problem to America.

PROFESSOR FREDERIC S. LEE has returned to his duties in Columbia University after a ten weeks' visit to England and France as the representative of the U. S. Public Health Service in an investigation of the physiological and hygienic aspects of industrial efficiency. He was able to meet many of the representative men of both countries who are engaged in the study and improvement of industrial conditions. While in England he sat as a member of the Industrial Fatigue Research Board, and he gave evidence before the War Cabinet Committee on women in industry.

DEAN HERMAN SCHNEIDER, of the University of Cincinnati Engineering College, has returned from his work in Washington on the Commission on Education and Special Training and will resume his work as head of the engineering college, which he gave up almost a year ago for war work.

DR. ARTHUR D. DEAN, professor of vocational education in Teachers College, was commissioned a major in the Sanitary Corps of the United States Army in the department of the Surgeon General, assigned to the department of education of the Division of Physical Reconstruction of the Surgeon General's Office. Major Dean has been professor of vocational education at Teachers College since 1916. Previous to that time he was chief of the division of vocational schools of the New York State Education Department.

EDWIN L. HOLTON, professor of education and dean of the summer school, Kansas State Agricultural College, has been appointed to the Inter-Allied Committee on the After Care of the Wounded Soldier.

DEAN ALLEN, of the college of engineering of the University of Minnesota, has been asked by the Y. M. C. A. to establish their schools of engineering for the American soldiers in France and to supervise them during the

period of demobilization. However he has declined the appointment because of the new work he is organizing here.

DR. W. R. HATT, head of the school of engineering at Purdue University, has been granted leave of absence for a year in order that he may accept a government offer to become one of a group of four men to supervise the educational and reconstructional work that is planned for the American soldiers in France before they return to this country. The work will cover both academic and vocational courses.

PROFESSOR WILLIAM NOYES, formerly of the department of industrial arts of Teachers College, Columbia University, has resigned his position at Duluth to engage in reconstruction work for the Federal Board for Vocational Education.

PROFESSOR FREDERICK H. EVANS, of Toledo University, is now working under the Committee on Education and Special Training with headquarters in Washington.

H. A. WIMMER, superintendent of schools at Rochelle, Ill., has been appointed by the Surgeon General to undertake administrative school work at Fort McPherson, Ga., where a school is being maintained for crippled soldiers.

MISS MABEL LITTLE, head of dining halls at Cornell University, who was granted a year's leave of absence to supervise the establishment of cafeterias in connection with munition factories in France, has received a second year's extension of leave to continue her work there.

DR. HUGH P. BAKER, who for nearly two years has been serving as a captain in the U. S. Army, has been released from service and has returned to resume his duties as dean of the New York State College of Forestry at Syracuse University. On account of an injury and because of his special training, Captain Baker had for the last few months been assigned to special investigative work for the Intelligence Bureau of the General Staff at Washington, D. C. Professor F. F. Moon, of the New York State College of Forestry at Syracuse University, who has been dean of the college during the absence of Dean Hugh P. Baker, has on the return of the latter to his work, been granted a year's leave of absence to begin immediately.

THE Division of Vocational Rehabilitation, provided for by the Smith-Sears Act, has completed its organization, and is now in active operation. The chief of the division is Dr. J. A. C. Chandler, superintendent of schools, Richmond, Va., and his staff includes: superintendent of training, Walter I. Hamilton, agent, State Board of Education, Boston, Mass., and more recently with the industrial education work of the Federal Board; superintendent of cooperation, Dr. H. L. Smith, dean of the college of education, Indiana State University; superintendent of case work, D. J. Richardson, attorney at law, Washington, D. C.; superintendent of records, J. H. Saunders, principal, Binford Junior High School, Richmond, Va.; superintendent of employment, H. L. Bronson, American Federation of Labor; field organizer, Dr. J. C. Miller, director of vocational education for the Province of Alberta, Canada; adviser to the Division, T. B. Kidner, of the Canadian Commission.

DR L. H. BAILEY, formerly dean of the college of agriculture, New York University, is working at the Gray Herbarium of Harvard University completing the determinations of the collection of plants he made in China in the spring of 1917.

PROFESSOR PAUL SHOREY, head of the department of the Greek language and literature at the University of Chicago, was recently elected to membership in the American Academy of Arts and Letters.

EBENEZER T. TURNER has been elected librarian of the Cornell Library, and thereby becomes, under the provisions of the charter, *ex officio* trustee of the university. The office was held by Mr. Turner's brother, Samuel B. Turner, from 1904 until his death in 1906; and recently by the late Dr. Charles Mellen Tyler. The Cornell Library, established and endowed in 1864, was the first of Ezra Cornell's larger benefactions in Ithaca.

SUPERINTENDENT R. O. STOOPS, of Joliet, Ill., has been elected president of the Illinois Superintendents' Association.

THE council of Westfield College (University of London) has appointed Miss Bertha S. Phillpotts to the vacant principalship. Miss Phillpotts's father was formerly headmaster of Bedford School, her uncle was headmaster of Rugby, and she is closely related to the heads of Girton College and Lady Margaret Hall.

MR. HARRY DUBERY, labor adviser of the British National Alliance of Employers and Employed, is visiting France to lecture to the troops on industrial matters in connection with demobilization. His tour is arranged by the educational section of the War Office.

DIRECTORS of education, professors and lecturers of universities in the Dominions, India and the United States were entertained at dinner at University College, London, on December 14, by the Imperial Studies Committee, which includes representatives of the Royal Colonial Institute, the Victoria League and the League of the Empire. An informal discussion followed the dinner, the speakers including Sir Charles Lucas (chairman, Imperial Studies Committee), Dr. Parkin, President MacLean and Dr. Cunliffe (American Universities Union), Colonel Adami (McGill University), the Bishop of Bathurst (director of education, Australian Imperial Force), Sir Theodore Morison, Lieutenant Ivory (representing the director of education, New Zealand Expeditionary Force), and Dr. Purves (Transvaal University College, University of South Africa).

THE London County Council has arranged a series of addresses to London teachers on various aspects of the problem of national reconstruction after the war. The first two addresses were: November 22, "The British commonwealth," by C. Grant Robertson; and December 11, "Hours of labor," by Lord Leverhulme. Sir Cyril Cobb, chairman of the Educational Committee of the Council, will preside at these lectures. Other lectures in connection with reconstruction will be given on the following subjects: Economic recovery, housing, agriculture and rural life, women's employment adult education, food supply, international relations, India and national health. The lectures are arranged for London teachers, but other persons can be admitted if accommodation is available.

PROFESSOR ANDREW C. MCLAUGHLIN, head of the department of history in the University of Chicago, has been elected George Slocum Bennett lecturer in Wesleyan University for the present year.

A SERIES of motion pictures of marine life made in Naples, Italy, will be shown at New York University on February 12 by Dr. R. L. Ditmars, curator of reptiles, New York Zoological Gardens, on the occasion of the annual Darwin lecture which will be given by Dr. C. L. Bristol, head of the department of biology at the university.

DR. JOHN W. HALL, of the University of Cincinnati, has accepted an invitation to give two courses in elementary education at the coming summer session of the University of California.

MEMORIAL services were held in Houston Club of the University of Pennsylvania, January 12, for Major Ward Pierson. Major Pierson, who was a member of the Wharton School Faculty, was killed in France on November 9 while leading his battalion. The memorial exercises were conducted by Provost Smith and Bishop Berry.

PROFESSOR WALLACE CLEMENT SABINE, widely known as an expert in acoustics, formerly dean of the Lawrence Scientific School and a member of the Harvard faculty since 1889, has died at the age of fifty years.

THE faculty of Wesleyan University has adopted a resolution by which the administration committee, the executive committee of the faculty, is to be composed of the president, the secretary of the faculty, and three members to be elected by ballot by the faculty. The previous method of selection had been, as for all standing committees of the faculty, nomination by a committee appointed by the president.

A NEW vocational high school has been completed recently in Waterbury, Conn., at a cost of $700,000. Harrison S. Allen, vice-principal of the local high school, has been appointed principal of the new school.

DISCUSSION AND CORRESPONDENCE

THE RURAL SCHOOL AND RURAL SOCIETY AFTER THE WAR

A NUMBER of highly thought-provoking discussions have appeared recently in periodicals and newspapers concerning post-bellum reconstruction and the land. But one writer touches a very vital spot in the whole problem, and one that can not receive too much attention if the plan is at all to prove effective, when he asks: "Will life on the farms make a powerful appeal to the men returning from the war, liberated from the routine that kept them to their usual labor in peace time? Or does life on the soil, despite recent improvements in condition, still deny the young man of ability opportunities commensurate with his awakened ambitions?" The war has not only awakened the ambitions of thousands upon thousands of young men from farm homes, but it has also given them a new outlook on life, a new standard of social and intellectual values, new tastes and new desires, and a moment's thought provokes the question: "Will these new men be willing to once more submit to the impoverished intellectual and spiritual life of the rural neighborhood with which they formerly thought themselves content?"

One phase of the general issue that invites attention concerns the hundreds of thousands who before the war were employed in offices and factories and in whom the war has developed a taste for outdoor life, another touches the young men from the country returning to the farm after the war, a third arises from the activities of the boys from rural sections who enlisted in the Students' Army Training Corps units.

Students of rural life are gradually beginning to realize that it is precisely those elements that make life in cities attractive and pleasant that are most conspicuously absent from the farming community, and the absence of which is greatly responsible for the townward migration of individuals and families from the farm. These elements involve in the main the lack of opportunities for social, intellectual and spiritual contact and recreation. The metropolitan takes for granted his lectures, libraries, theatres, music and concert halls, good schools and good churches, and all other experiences that cater to his other than physical needs, as a natural part of his environment. What, consequently, will be the attitude of the returned soldiers from the city, to be converted into a farmer, when it comes to this ingredient of his former life? Will he be willing to relinquish it entirely for the benefits of country life, or will it not be more natural for him to harbor a feeling of discontent, such as exists among the natives to-day, and which leads them cityward? Thucydides credits Pericles with the saying that "individuals are happier in the bosom of a prosperous city, even though they suffer themselves, than when individually prospering in the midst of a languishing state."

The problem assumes a more serious aspect when we consider the young men from the farm on their return to the soil. Just what has camp life done for these young men?

(*a*) *Social.*—The gregarious atmosphere of army life is very marked, and every soldier is influenced by it more or less. "What will it mean to the soldier who has come into the army from a small country place? We know from what social workers among the soldiers tell us that the country boy is often very sensitive to this enormous change from an isolated rural neighborhood to the closest contact possible in a community which is literally a real city. What result is this likely to have upon the social needs of the men from rural districts? It is to be expected that many of them will not be content again in the country." Socially, then, the farmer-soldier will have developed cravings that his former environment can not satisfy.

(*b*) *Intellectual.*—The soldier will be a bigger man mentally after the war. This will be particularly true of the country boy, for

all his former intellectual barriers are being rapidly removed through the various opportunities open in camp for mental improvement and the broadening of the mental horizon. There are lectures, plays, movies and entertainments for him almost every night. In one camp alone four thousand books per week are being circulated and many magazines distributed gratis. He hears some of the greatest American platform orators, instrumentalists, singers and entertainers. Here again the farmer-soldier will have developed desires the means for the satisfaction of which are entirely lacking in the rural neighborhood.

(*c*) *Educational.*—The educational features of the modern training camp are very marked. To the farmer boy the camp is a wonderland of educational opportunities when compared to his former school experiences. He is now in attendance at a veritable university. He can attend classes in European geography, French, English, American literature, history, mathematics and manual classes along trade lines. Here is a curriculum of studies that will make him ashamed of the dilapitated little school house at home, and negatively affect his attitude towards rural life.

(*d*) *Recreational.*—What is most conspicuously absent from rural life is most conspicuously present in camp life, and what the young man on the farm is most conspicuously deprived of at home he is most plentifully supplied with in the camp—opportunities for every kind and type of physical and mental recreation. He can engage in football, basketball, baseball, cross-country running, boxing, volley-ball, hand-ball and a dozen or more other sports, while for mental relaxation mass singing, movies, musical entertainments, vaudeville, etc., are open to him. This phase of camp experiences is bound, by itself, to have a most marked effect on the question of rural life after the war, for we are dealing here not with a secondary and unimportant phenomenon but with one of the most active factors of rural life improvement, the provision of means for the proper and joyful employment of leisure.

What will happen to the little dilapitated church with its squeaky organ and empty preaching, the broken down little school house with its little teacher teaching little children little things at a little salary, the old-time rural games and plays, the little attempts at dramatics and entertainments, when they face the new vision of the new man on the soil after the war? And if they fade into insignificance, as they are bound to do, what will be the size of the old problem of maintaining a contented rural population after the war?

Fifty boys in a Student Army Training Corps unit, all of whom hailed from the farm, were recently asked as to the probable effect of their new training upon their attitude towards the old life on the farm. The answers came unhesitatingly, "either life on the farm will be enriched to meet the new desires or the boys will drift to the towns and cities."

Taking only the south into consideration it is safe to assume that at least sixty per cent. of the young men in these school military units come from farm homes. This majority will no doubt demand a new rural life, richer in those aspects of life that minister to the inner man rather than to his physical needs and satisfactions. Will this matter take care of itself, or would it not be a wiser policy to make provision for the solution of the problem before the problem actually forces itself upon us in the form of wholesale townward migrations from the open country after the war?

MAX SCHOEN

STATE NORMAL SCHOOL,
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TEACHERS' ESTIMATES OF NEGROES AND WHITES

IN the recent survey of a special school, it was noted that excluding the foreigners there were an equal number of white and negro children. The purpose of this school, which is maintained by the board of education, and is a part of the regular school system of the city, is to take care of (1) the children who fall behind in their school work for some reason, and (2) the so-called incorrigibles, *i. e.*, children who have become unruly and unmanageable in their regular schoolrooms.

It has been commonly supposed that the negroes are more retarded than the whites in such groups. As the children came from all parts of the city, there was no element of environment so far as class or district of the city is concerned. It so happened that there were 44 white children and the same number of negroes. The C. M. A.'s for the two groups were:

	Average	Median
Whites	.83	.84 ± .15
Negroes	.82	.84 ± .12

Thus the two groups were mentally the same. When they were classified according to their cause of admission or the offense for which they were sent to the school, they were again equally divided. In each group, *i. e.*, white and colored, there were 20 incorrigibles and 24 subnormals. With this remarkable similarity of the two groups, they were compared on the basis of teachers' estimates.

Each teacher was asked to give her estimate of each child's ability, (1) when he entered the school and (2) when he left or at the end of the term. These results were then compared with the results of the individual diagnoses obtained with the Yerkes-Bridges Point Scale. The results are as follows:

	Too Low	Too High	Ranked According to Diagnosis
Negroes	33%	38%	29%
Whites	37	15	48

It will be seen at once that almost half of the white children were ranked correctly, whereas but a little more than a fourth of the negro children were ranked according to the Point Scale diagnosis. The percentages of those ranked too low is nearly the same for both groups, but on the other hand more than twice as many of the colored children as white were ranked too high.

One of these teachers, with considerable experience in special room work, remarked that she did not have to test her children, that "she could tell just as soon as she looked at them which ones were feebleminded and which were not." The accuracy of the judgments in neither group is very high, but it is much superior in the case of the white children.

On the other hand, when the diagnoses of these same children were compared with the teachers' reports of their work during the year and their estimate of their future possibilities somewhat greater consistency was realized. The estimate of progress and ability to care for self was in accord with the diagnosis of mental ability in all except four of the white children and all but nine of the colored. Here again we find a greater discrepancy in the estimates made of the negro children. Whether the prevalent idea of lower standard for the negro be the cause for this, *i. e.*, that they are unconsciously ranked higher because the teacher is accustomed to think of the negro in lower terms, one can not say. It is more likely that the general traits of the negro child are less familiar to the average white teacher, so he is more difficult to classify by the means usually employed by the teacher. Or, he may possess certain social traits and unusual characteristics which tend to bias the judgment of the teacher.

A larger number of cases would be more significant perhaps, but these 88 cases are sufficient to show the discrepancy between teachers' estimates of white children and negro children of the same mental ability.

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QUOTATIONS

THE PENSION PROBLEM AND ITS SOLUTION

Pension: An allowance made to any one without equivalent. In England, it is generally understood to mean pay given to a state hireling for treason to his country.—DR. JOHNSON'S *Dictionary.*

THE definition quoted from the first edition of Dr. Johnson's famous Dictionary serves to emphasize some distinctions concerning pensions not always borne in mind.

One is, that a pension is an allowance granted to an individual without financial cooperation on his part. The term annuity, on the other hand, is used to describe a similar allowance provided at the cost of the beneficiary in whole or in part.

The latter half of the good doctor's definition

became later a source of no small embarrassment to him, when George III. of blessed memory, conferred upon him an annual pension of £300. Notwithstanding his definition, Dr. Johnson ended by accepting the pension, though his critics never ceased to insist that his political views had been warped by his enjoyment of the royal favor.

Americans past middle life, whose memories gó back to the days immediately following our Civil War, while not sharing Dr. Johnson's sweeping condemnation, nevertheless look askance at all pensions, and more particularly at governmental pensions. Our Civil-War pensions had their beginnings as an expression of gratitude of a nation to those who had suffered in its service, and to the dependents of those who had given their lives as the full measure of devotion. Had it been limited to these, the purpose of the nation would have been fulfilled. What was intended as a gracious expression of a nation's gratitude grew into a system of organized privilege. Our pension legislation developed into the greatest legislative abuse in the history of the government, and constitutes to-day a monument to the weakness of our law-makers and of our presidents; for in this matter our presidents have shown no greater courage against the assaults of political and personal privilege than have our congressmen.

* * * * *

Twelve years ago the Carnegie Foundation was instituted by Mr. Andrew Carnegie, with a generous endowment. Its purpose was to provide pensions for college teachers grown old in the service, and to lift from their minds, as the time of retirement approached, the apprehensions which hang over a man whose salary has been small, whose obligations have been great, and for whom old age may mean dependence. When it was instituted, there was no other thought in the mind of Mr. Carnegie or of his trustees than to pay such pensions, upon the non-contributory plan, to teachers in the United States and in Canada, as could be reasonably provided through the income of the endowment.

There is, indeed, no such thing as a free pension when it is involved in the relation which exists between employer and employee. It will inevitably be absorbed in wages, with the result that, while all salaries are affected thereby, a few beneficiaries only will receive the deferred pay provided under the pension system. For these reasons, therefore, the non-contributory pension system will not only prove a disappointment in time, but will also work a practical injustice. It is likely to work mainly in the interest, not of the individual, but of the agency which employs him.

* * * * *

Aside from the economic and financial weaknesses which have just been alluded to, there is a more serious objection to the free pension which only those who have administered such a system can fully understand. This lies in the fact that, to get something for nothing, or to seem to get something for nothing, has always proved demoralizing. The so-called free pension is perhaps the most prolific breeder of human selfishness ever set up in the social order. Whether for preachers or for teachers, for civil servants or for workingmen, a pension system nominally paid for by someone else is almost sure to prove in the long run a disappointment, and to make an appeal to a human weakness common to the best of men.

* * * * *

No other misfortune is more to be dreaded than dependence. One of the most touching letters that ever reached the Carnegie Foundation came from the widow of an old college teacher in the middle west. For forty years he had given himself unselfishly to the work of a teacher, and he did not feel himself underpaid though his highest salary never exceeded twelve hundred dollars. When his widow wrote gratefully to acknowledge the first payment of the modest pension coming to her under the rules, she added, "You can not perhaps understand what this means to me; but with our small house, which was all John could save out of his salary, it means the difference between dependence and independence. When I think of that I say, 'God bless Andrew Carnegie!'"

There is a charming sequel to this incident, that I can not forbear telling. When this

letter was shown to Mr. Carnegie, he found it difficult for some minutes to find his voice; but when he finally found it, he said, "I have had some large dividends in my time, but never so big a dividend at this."

Following this conclusion, there has been established an agency called the *Teachers Insurance and Annuity Association of America*, with a capital of one million dollars, incorporated under the insurance laws of the State of New York, which will offer to the teachers of the United States, Canada and Newfoundland policies for insurance and for old-age annuities at net cost—all overhead expense being paid from the income on the capital provided, or, if this should in time prove insufficient, by the Carnegie Foundation from its own funds. The one million dollars of capital was provided through the generous aid of the Carnegie Corporation.

* * * * *

In the same way, the teacher may accumulate by modest monthly payments an old-age annuity, to begin at sixty-five or any other age at which he may desire to avail himself of it. In the accumulation of the old-age annuity his employer, the college, assumes its proportion of the cost. The college instructor at age thirty, with a payment of five dollars a month, and a similar payment on the part of his college, accumulates at age sixty-five an old-age annuity of a thousand dollars. Should he retire at an earlier age, his annuity would be less, at a later age, more. Upon his death, his wife would continue to receive half of the amount of the annuity paid her husband. Under the conditions of his policy, should he die before retirement, all this accumulation—both his own payment and that of the college—with the accrued interest, goes to his wife and family in addition to the insurance. Thus, while the five per cent. contribution of the college will, after a number of years, come to be discounted in the salary, it will still remain true that this money returns with interest to each individual teacher; and though it be deferred salary, it is much to his advantage that the college should pay this amount to his credit into a reserve for his protection.

Such a plan does absolute justice to each individual. It rests upon sound economic and financial ground, and affords to the teachers of the United States and Canada, for the first time, a means whereby they may protect themselves and their families against the hazards of life which necessarily hang over a family supported by the modest fixed salary of a teacher. The solution thus attained after years of study not only is in the interest of the teachers, but lends itself to a freedom of movement impossible under any restriction of pensions to a limited group of institutions. The question of protection against dependence ought not to be complicated with other aims, but should stand squarely on its own feet. Best of all, such a plan makes an appeal to personal independence and personal sense of responsibilities, instead of weakening these qualities.

* * * * *

The trustees of the Carnegie Foundation undertook the administration of a trust in a field but little understood. In working out the plan which has been briefly outlined, they sought to answer the three difficult questions before them, thoughtfully and sincerely. These same questions confront each of the numerous pension systems organized in our country in the past dozen years.—Extracts from an article in *The Atlantic Monthly* for December by Henry S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching and of the Teachers' Insurance and Annuity Association of America.

EDUCATIONAL RESEARCH AND STATISTICS

VARIABILITY OF CHILDREN IN SPELLING

IN the spring of 1916, an attempt was made to find the spelling skill of children in Iowa cities of 2,500 to 10,000 population as judged by measurements with words taken from the Ayres scale.[1] Forty words were chosen at ran-

[1] "Measuring Scale for Ability in Spelling," Leonard P. Ayres, Russell Sage Foundation.

dom from columns L, Q and U. Twenty words from each column were placed in sentences, two to each sentence. Three ideas controlled the making of these sentences:

1. That each sentence should express a thought within the thinking range of the children of a given grade.

2. That the length of the sentences should vary as little as possible, and that the extreme length of the sentence should not contain more letters than the number written by the lower quartile of pupils in the grade for which they were designed. (This speed was determined from an Iowa study of speed and quality of handwriting as given in the State University of Iowa, Extension Bulletin No. 15.)

3. That the two spelling words should appear as near the beginning of the sentence as possible and the second should never be the last word of the sentence.

The words in column L, as will be seen by reference to the scale, are words for which a general spelling average in the United States is 73 per cent. for the third grade and 88 per cent. for the fourth grade. Those in column Q show an average of 73 per cent. for the fifth and 84 per cent. for the sixth grade. Those in column U show 73 per cent. for the seventh and 84 per cent. for the eighth grade. The selection of these columns, permitted two grades to be tested upon the same words thus giving a direct comparison and yet have the spelling average of neither grade excessively high nor excessively low. At the same time grades three, five and seven would be spelling words of equal difficulty, words upon which pupils in general have averaged 73 per cent., and grades six and eight words of the same difficulty, namely 84 per cent.

The test was given by the teacher according to printed instructions. These instructions were as follows:

I am going to read you some sentences which I wish you to write down; the sentences are not long so you need not hurry. Be careful of your writing and spelling. I will read each sentence but once. Do not begin writing until I have finished reading the sentence. Listen carefully until I am through, then write the sentence just as I have read it. If you have not finished when I am ready for the next, stop at once and listen to the new sentence.

Thirty seconds were allowed for each sentence. After finishing the sentences, the children turned their papers over and the other twenty words were pronounced as an ordinary spelling lesson. This permitted repronunciation, definition and illustrative sentences at the discretion of the teacher.

This test was given in 27 cities of Iowa during the last week of school in May or June of 1916. The distribution of pupils taking the test was as follows:

Grade	III	IV	V	VI	VII	VIII
	1,620	1,635	1,841	1,338	1,228	1,156

One of the most significant facts ascertained in the study was that judged by these spelling results, a very large number of children in one grade might as well be in the grade above or below their present status. This is clearly shown by the following data:

OVERLAPPING

Per Cent. of Third grade making above Fourth grade standard	Per Cent. of Fifth grade making above Sixth grade standard	Per Cent. of Seventh grade making above Eighth grade standard
40	34	43
Per Cent. of Fourth grade making below Third grade standard	**Per Cent. of Sixth grade making below Fifth grade standard**	**Per Cent. of Eighth grade making below Seventh grade standard**
18	29	23

WHAT HAPPENS OVER THE SUMMER VACATION

In August, 1916, the writer decided to ask some of the superintendents in the schools contributing data in the spring to give the same tests during the first week of school in the fall to see what had happened during the summer vacation. Unfortunately the fact was not taken into consideration that most of these pupils had been promoted in June. Consequently upon receipt of the papers it was found that grades V. and VII. (September classification) took a different test in September from the one they had taken in June. However, grades IV., VI. and VIII. in September, having been grades III., V. and VII. the previous June, took the same test the second time. It was therefore possible to pick

TABLE I

Scores of Same Pupils on Same Test before and after Summer Vacation. Grade V, List.

June Scores

September Scores	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	Total
100															1	1		7	11	14	19	53
95														1	1	2	4	2	16	12	16	54
90														1	3	4	12	8	13	13	8	62
85												1			3	4	5	11	8	5	1	38
80												2	1	2	3	5	5	9	1	4	1	33
75											1	2	4	3	4	4	9	4	2	1		34
70										1	2	2	8	2	4	3	5	1	4			32
65										2	4	5	1	3	2	3	2		2			24
60						1	1					3	2	5	3	3	1	1				20
55						1	1		1	4	2	3	3	1	2	1	3		1			25
50									2	4	3	4	5	4	1	1						24
45							1		1	1	4	1			1		1					10
40							2		3	1		2										8
35							1		2	2	1		3									9
30						1	3	1	1	1	2		1			1						11
25					1									1								2
20				1			2				1											4
15					1						1											2
10					1	1			1													3
5		1		2																		3
0																						
Total		1		3	3	4	13	1	11	16	21	25	28	23	28	32	47	43	58	49	45	451

out from the mass of papers received from the schools responding in September, a large number of individuals who took the same test in June and September.

TABLE II

Change of Score of Identical Pupils on Same Test June and September.

Grade III

City	Dictation				List			
	No. Pupils	Per Cent. Gained	Per Cent. Lost	Per Cent. Same	No. Pupils	Per Cent. Gained	Per Cent. Lost	Per Cent. Same
1	29	21	62	17	29	24	55	21
3	32	31	41	28	32	34	47	19
4	38	29	55	16	38	18	68	13
5	54	18	61	20	47	34	55	11
6	67	15	57	28	67	21	63	16
7	66	30	51	18	66	32	50	18
9	42	55	31	14	42	21	50	29
Total	328	27	52	21	321	26	56	18

Grade V

1	27	30	48	22	27	37	48	15
2	104	38	49	13	104	38	39	22
3	33	70	18	12	33	39	49	12
4	50	76	16	8	50	64	22	14
5	40	32	48	20	40	25	42	32
6	59	41	49	10	59	32	47	20
7	58	43	34	22	58	52	33	16
8	54	59	24	17	54	50	31	19
9	26	15	65	19	26	15	65	19
Total	451	46	39	15	451	41	40	19

Grade VII

1	12	28	47	25	12	42	17	42
2	45	31	31	38	45	20	27	53
3	35	60	26	14	35	34	37	27
4	47	43	40	17	47	47	30	23
5	31	55	35	10				
6	63	40	40	20	63	49	32	19
7	64	42	33	25	65	32	29	38
8	60	30	47	23	60	47	38	15
9	38	71	18	11	28	42	26	32
Total	395	45	34	21	365	39	31	30

These papers were graded and tabulated, showing the scores made by the same individuals in June and September. There were 328 third grade children, 451 fifth grade and 395 seventh grade who took the dictation test in June and September. For the list test, the numbers are slightly different for grades III. and VII. Table I. shows the tabulation of pupils in grade V., list, according to the grade they made in June and September. The June scores are shown on the horizontal scale and the September scores on the vertical scale. Individuals appearing above the diagonal made higher scores in September than in

June and those below, made poorer scores in September than in June.

Table II. shows the number of pupils for each city and grade with the per cent. who gained, who lost and who made the same score on the two tests. Gain means that the higher score was made in September. It will be noted that the per cent. who lost, that is, made poorer scores in September than in June, is much larger in the third grade than in the seventh. Also the per cent. who gained varies in the opposite direction.

TABLE III

Deviation of September Scores from June Scores
Per Cent. of Pupils varying stated Amounts

Grade III

	Dictation			List		
	B	G	T	B	G	T
Same Score	17	24	21	15	20	18
Dev. of 5–10 per cent.	49	41	44	47	51	49
Dev. of 15–20 per cent.	21	24	23	22	20	21
Dev. more than 20 per cent.	13	11	12	15	9	12
Grade V						
Same Score	14	17	15	17	21	19
Dev. of 5–10 per cent.	58	49	54	57	53	55
Dev. of 15–20 per cent.	19	23	21	16	19	18
Dev. more than 20 per cent.	9	11	10	9	6	8
Grade VII						
Same Score	13	29	21	26	33	30
Dev. of 5–10 per cent.	54	51	53	51	51	51
Dev. of 15–20 per cent.	22	14	18	17	12	15
Dev. more than 20 per cent.	11	6	8	5	4	4

Table III. presents the deviation of September scores from June scores with the per cent. of pupils varying stated amounts. This is also separated on the basis of sex.

For each grade is given the percentage of pupils who made the same score; or deviated from the previous score by 5 or 10 per cent.; by 15 to 20 per cent.; or by more than 20 per cent. This deviation includes both gain and loss of stated amounts. It will be noted that approximately 50 per cent. of the pupils made a deviation of between 5 and 10 per cent. Less than one half as many in any grade and less than one third as many in the seventh grade deviated 15 or 20 per cent. Although the percentage of pupils who deviated more than 20 per cent. amounts to 12 per cent. in both dictation and lists in grade III., it is 10 and 8 respectively in grade V. and but 8 and 4 respectively in grade VII.

This lessening of extreme deviation is perhaps due to a more definite fixation of the spelling of a word at the time it is learned in the upper grades than in the lower. At least I believe it to be worth while to test out this hypothesis farther and ascertain, if possible, the cause for the decrease in extreme deviation. It is quite noticeable that in all grades and in both tests a larger percentage of the girls than of the boys made the same score and a smaller percentage of the girls made the extreme deviations.

Table IV. shows the change in the average grades from June to September. This table presents the interesting fact that although the average grade was lower in grade III., it remained almost constant in grade V. but was appreciably higher in grade VII. No explanation is found to account for this phenomenon.

TABLE IV

Average Grade of All Pupils

Grade III

	Dictation			List		
	B	G	T	B	G	T
June	53%	68%	61%	57%	73%	65%
September	49%	65%	58%	51%	68%	60%
Change	−4%	−3%	−3%	−6%	− 5%	−5%
Grade V						
June	63%	78%	68%	71%	78%	74%
September	63%	75%	69%	70%	79%	75%
Change	0	+2%	+1%	−1%	+ 1%	+1%
Grade VII						
June	65%	78%	72%	71%	71%	71%
September	67%	80%	73%	72%	84%	78%
Change	+2%	+2%	+1%	+1%	+13%	+7%

In scoring the September papers, the writer was impressed by the fact that some who spelled certain words correctly in the spring, missed them in the fall and some who spelled words incorrectly in the spring, spelled them correctly in the fall. It was thought worth while to check this variability for each indi-

vidual word for the three grades of one school system.

Table V. presents these data for the list spelling, grade V. only. The results secured in the other grades were very similar in all respects.

TABLE V

Percentage of Pupils Missing each Word. Grade V. List: 31 Boys, 27 Girls

Word	Missed in Spring Only		Missed in Fall Only		Variable
	Boys	Girls	Boys	Girls	
declare	13	11	16	4	22
region	0	4	3	4	5
serve	19	19	6	7	26
field	6	7	23	15	26
when	0	0	3	0	2
period	3	4	6	11	12
crowd	16	11	6	11	22
effort	23	30	16	0	34
result	3	7	3	0	7
action	3	0	16	7	14
employ	10	11	13	7	21
term	13	4	3	4	12
due	3	7	13	4	14
appoint	23	19	6	15	31
gentlemen	0	4	26	4	17
connection	19	33	0	7	29
publish	6	0	6	7	10
president	3	0	10	11	12
running	3	0	13	11	14
themselves	6	7	13	15	26
Average	9	9	10	7	18

Two facts appear clearly from the data:

First, there is considerable variation in the variability of different words in the same column.

Second, the girls show greater variability in grade III. about the same in grade V., and less in grade VII. than the boys of like grade.[2]

Being distinctly impressed by this variability of the children's spelling, it was decided to pursue the question further by having the same words spelled under varying conditions. To do this the twenty words from column U of the scale, which had been incorporated in the sentences for grades VII. and VIII., were placed in two other sets of sentences, conforming to the same general conditions. On January 8, the three sets were given consecutively to groups of children in grades VI., VII. and VIII. in the Iowa City Grammar school. Consequently these children had each of these words presented three times during fifteen minutes. At the same time Set I. of these sentences was given to another group in each of these same grades. Set II. was given to these latter pupils on January 9, and Set III. on January 10. These papers were carefully scored and the results tabulated showing the number of pupils who missed each of the words at the various oportunities, the percentage of accuracy and the percentage of pupils doing variable spelling.

[2] Data for grades III. and VII. worked out but not presented in this paper.

TABLE VI

Variability of Spelling. Grade VI. B. 22 Pupils. January 8, 1917. Number of Pupils Missing Each Word

	1st Only	2d Only	3d Only	1st and 2d	1st and 3d	2d and 3d	Always	Never	Percentage of Accuracy	Percentage of Pupils who were Variable
receive	1	..	1	...	2	...	11	7	41	18
material	3	1	2	...	...	1	6	9	61	32
suggest	1	2	...	...	...	...	8	11	59	14
responsible	...	1	1	1	...	...	10	9	48	14
distinguish	1	1	2	1	...	1	13	3	29	27
occupy	1	..	3	...	1	...	8	9	54	23
difficulty	1	2	..	1	...	...	12	6	38	18
agreement	...	1	1	...	3	1	10	6	39	27
majority	2	..	3	1	2	...	11	3	33	36
necessary	...	...	...	...	1	...	19	2	11	5
circumstance	1	1	..	1	...	1	12	6	36	18
meant	1	5	..	...	...	...	8	8	54	27
unfortunate	...	2	...	...	2	...	13	5	32	18
colonies	2	1	3	3	...	...	7	6	50	41
mere	2	..	2	...	1	...	7	10	59	23
beginning	..	3	1	3	...	...	8	7	48	32
probably	...	1	..	1	...	2	14	4	26	18
divide	3	3	2	1	1	...	4	8	64	45
earliest	3	..	1	2	1	...	7	8	53	32
citizen	1	1	..	3	...	1	4	12	67	27
Average in %	5	6	5	4	3	2	47	31	45	25

Tables VI. and VII. show results of Grade VI. in detail. The results in grades VII. and VIII. were quite similar. Summary of all grades is presented in Table VIII. The table shows the average percentage of the pupils who missed each word at the various opportunities. No comparison need be made among the various groups since there was no

previous evidence that the children were even of approximately equal ability in spelling. The most significant fact probably is the percentage of variability which, although it varies greatly between specific words, averages on the whole about 20 per cent. In other words, it seems to be a fair guess that in a series of words presented three times in succession on the same or succeeding days, that the children will vary their spelling about 20 per cent. of the time.

TABLE VII

Variability of Spelling. Grade VI. B. January 8, 9 and 10, 1917. 21 Pupils. Number of Pupils Missing Each Word

	1st Only	2d Only	3d Only	1st and 2d	1st and 3d	2d and 3d	Always	Never	Percentage of Accuracy	Percentage of Pupils who were Variable
receive	1	1	..	1	...	...	15	3	22	14
material	..	1	1	1	...	...	8	10	56	14
suggest	..	1	1	...	...	1	4	14	75	14
responsible	1	2	2	...	...	...	12	6	38	14
distinguish	5	..	..	1	...	...	10	5	41	28
occupy	1	1	..	...	3	...	8	8	49	23
difficulty	2	1	..	...	1	...	10	7	44	19
agreement	3	..	..	...	2	...	6	10	60	28
majority	1	1	1	2	1	...	9	6	43	28
necessary	..	..	..	1	...	...	18	2	11	5
circumstance	1	..	2	2	1	...	9	6	43	28
meant	1	..	1	...	...	...	7	12	63	10
unfortunate	2	..	1	1	...	...	13	4	30	19
colonies	..	1	..	...	...	...	12	8	41	5
mere	..	..	..	1	...	...	6	14	68	5
beginning	2	1	2	...	1	...	8	7	51	28
probably	..	..	1	2	...	1	14	3	22	19
divide	2	1	..	...	...	...	6	12	67	14
earliest	1	1	..	1	...	...	7	11	60	14
citizen	2	..	..	2	1	...	4	12	68	24
Average in %	6	3	2	4	2	...	47	38	48	18

TABLE VIII

Average Percentage of Pupils Variable

	Grade VI	Grade VII	Grade VIII
Same day	25	22	18
Successive days	18	18	22

Thanks to the cooperation of Mr. James W. Richardson, Director of Educational Research, Hibbing, Minn., it was possible to try out the experiment with a much larger group and with additional variation of conditions. The three sets of sentences given to the children of Iowa City in January on the same and succeeding days were given to groups of children in Hibbing in the sixth, seventh and eighth grades on the same day, on succeeding days and on alternate days.

Table IX. confirms the conclusions drawn on Tables VI., VII. and VIII. The children at Hibbing seemed to show even a slightly higher degree of variability than those in Iowa City and the effect of skipping a day between successive tests did not seem to materially change the situation. Of course it is recognized that different pupils were used under the varying conditions and so it is not known what these same pupils might have done had they had the words presented under some other condition.

The conclusions on the whole matter so far as is presented in this paper seem to be these:

1. That a large percentage of the children vary their spelling when successive opportunities are presented for them to attempt the same words.

TABLE IX

Average Percentages of Children Varying their Spelling on Each Word

Grade	Same Day		Successive Days		Alternate Days	
	No. Pupils	Per Cent.	No. Pupils	Per Cent.	No. Pupils	Per Cent.
VI	33	21.5	29	46	35	38.5
VII	41	25.1	22	30.6	41	25.1
VIII	17	25.8	20	26.8	21	23.6

2. That any test upon a class presents a rather accurate view of the spelling skill of the class as a whole but is very unreliable as a measure of the individuals within a class.

3. The proportion of pupils varying their spelling when attempting the same words on the same day or successive days seems to be fairly constant.

4. A large amount of experimental work must yet be done before we are able to state definitely just when our task of teaching a certain group of words in spelling has been accomplished for the individual members of a group.

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